

REMARKS

Applicants respectfully request entry of the foregoing and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. § 1.112, and in light of the remarks which follow.

Claims 1-30 are pending in the application.

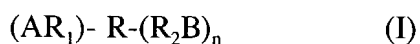
By the above amendments, claims 22, 24, 26, 28 and 29 are rewritten in independent form.

Applicants thank the Examiner for the courtesies extended to their representative Martin A. Bruehs during the telephone interview of January 30, 2004. In particular, Applicants thank the Examiner for agreeing to give favorable consideration to Applicants' remarks concerning the outstanding § 102(b) rejection of claims 17-21, 23, 25, 27 and 30 over Aharoni (U.S. Patent No. 5,493,000)

Applicants also thank the Examiner for acknowledging receipt of Professor Giuseppe Di Silvestro's Declaration on July 23, 2003, and for withdrawing the rejections over Aharoni (U.S. Patent No. 5,480,944).

Turning now to the Official Action, claims 17-21, 23, 25, 27 and 30 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Aharoni (U.S. Patent No. 5,493,000). For at least the reasons that follow, withdrawal of the rejection is in order.

Independent claim 17 defines a thermoplastic copolyamide resulting from the reaction between at least one polyfunctional monomer satisfying the following general formula I:

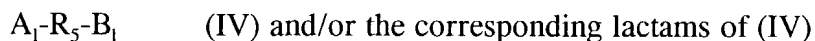
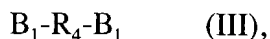


in which:

- n is an integer greater than or equal to 2,
- R_1 , R_2 may be identical or different and represent a covalent bond or an aliphatic, arylaliphatic, aromatic or alkylaromatic hydrocarbon radical,
- R is a linear or branched aliphatic radical, cycloaliphatic radical, an aromatic radical, or a polymeric chain,
- A represents an amine or amine salt functional group, or an acid, ester, acid halide or amide functional group,
- B represents an amine or amine salt functional group when A is an acid, ester, acid halide or amide functional group, or B is an acid, ester, acid halide or amide functional group when A is an amine or amine salt functional group,

and at least one bifunctional monomer of the following formulae II to IV and optionally, a monofunctional monomer of the following formulae V or VI; or a prepolymer obtained from at least one bifunctional monomer of the following formulae II to IV and optionally, at least one monofunctional monomer of the following formulae V or VI,

- the bifunctional monomers satisfying the following general formulae:



- the monofunctional monomers satisfying the following general formulae;

R_6-B_1 (V) and/or

R_7-A_1 (VI)

in which

- A_1 , B_1 may be identical or different and represent an acid, ester or acid chloride functional group, an amine functional group or an amine salt,
- R_3 , R_4 , R_5 , R_6 , R_7 represent aromatic, linear or branched, alkyl hydrocarbon radicals or alkylaryl, arylalkyl or cycloaliphatic radicals optionally including unsaturated groups;

wherein a molar ratio of the multifunctional monomers of formula I to a sum of the difunctional monomers of formulae II, III, IV and monofunctional monomers of formulae V and VI is between 0.01 and 5. (Emphasis added.)

The Official Action takes the position that Aharoni discloses formation of polyamides with polyfunctional branching monomer having formula $B_{2c}-R_2-A_{2d}$; and that considering Applicants' polyfunctional monomer and the possibility that R_1 and R_2 can be covalent bonds, the chemical formula of Aharoni satisfies the formula of the present invention. The Official Action further asserts that the polycondensation reactions in Aharoni are done in the presence of a condensation catalyst; that R_2 of Aharoni can also contain more than one aromatic ring, such as naphthyl or biphenyl; and that the resulting polymer of Aharoni has nitrogen and oxygen in polymer chain, wherein both are considered heteroatoms. From these assertions, the Official Action concludes that Aharoni

anticipates claims 17-21, 23, 25, 27 and 30. (See Official Action at page 2, paragraph 2 to page 3.)

Aharoni relates to a branched fractal three-dimensional porous polymer species which comprises rigid aromatic recurring units having electrophilic or nucleophilic reactive moieties on the exterior thereof. Another aspect of this invention relates to a star polymer comprising a polymeric core formed of the fractal polymers (FPS) of this invention having linear polymeric moieties grafted to the exterior thereof by way of residues formed by reaction between the reactive moieties on the exterior of the fractal polymer (FP) and complimentary reactive moieties on a linear polymer. Yet another aspect of the invention relates to polymeric composites comprising a polymer matrix having dispersed therein the star polymers of the invention. (See Aharoni at column 1, lines 13-25.)

It is well established that in order to demonstrate anticipation under § 102(b), each element of the claim at issue must be found, either expressly described or under the principles of inherency, in a single prior art reference. See, Kalman v. Kimberly-Clark Corp., 218 USPQ 789 (Fed. Cir. 1983). That is not the case here.

For example, Aharoni does not disclose or fairly suggest a thermoplastic copolyamide resulting from the reaction between at least one polyfunctional monomer satisfying the general formula I and at least one bifunctional monomer of the formulae II-IV and optionally, a monofunctional monomer of the formula V or VI or a prepolymer obtained from at least one bifunctional monomer of the formulae II to IV and optionally at least one monofunctional monomer of the formulae V or VI, wherein a molar ratio of the multifunctional monomers of formulae I to a sum of the difunctional monomers of formulae

II, III, IV and monofunctional monomers of formulae V and VI is between 0.01 and 5.

(Emphasis added.) In particular, Applicants recognize that the Official Action asserts that Example II of Aharoni discloses a ratio of polyfunctional monomer to difunctional monomer equal to 1. However, Aharoni does not disclose a copolyamide having a percent molar ratio of the polyfunctional monomers of formulae I to the sum of difunctional monomers and monofunctional monomers that is between 0.01 and 5. In particular, Applicants believe that the Examiner may not fully appreciate that the molar ratio (R) defined in claim 17 is a percent molar ratio that corresponds to:

$$R = [\text{polyfunctional monomers}/(\text{difunctional} + \text{monofunctional monomers})] \times 100.$$

As previously explained, this low molar ratio of multifunctional monomers makes it possible to obtain copolyamides that exhibit a high melt viscosity as well as mechanical properties such as impact strength and tensile strength, which make the copolymers especially useful for extrusion blow-molding processes. Thus, Aharoni does not anticipate claim 17 because Aharoni does not expressly or inherently describe each element of claim 17.

For at least these reasons, claim 17 is patentable over Aharoni. In addition, because claims 18-21, 23, 25, 27 and 30 depend, directly or indirectly, from independent claim 17, these claims are also patentable over Aharoni for at least the reasons that claim 17 is patentable thereover. Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 102(b) rejection over Aharoni.

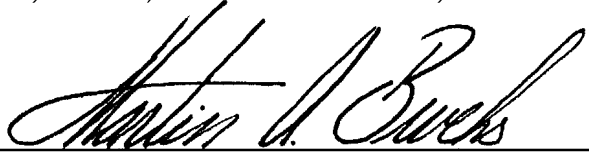
Applicants thank the Examiner for acknowledging that claims 1-6 are allowed and that the Declaration of Professor Di Silvestro obviates the previously-outstanding § 103 rejections. Additionally, Applicants thank the Examiner for acknowledging that claims 22, 24, 26, 28 and 29 would be allowable if rewritten in independent form to include the elements of the base claim and intervening claims. In view of the above amendments and remarks, Applicants submit that all pending claims in the application are now in condition for allowance.

From the foregoing, Applicants earnestly solicit further and favorable action in the form of a Notice of Allowance.

If there are any questions concerning these paper or the application in general, Applicants invite the Examiner to telephone the undersigned at the Examiner's earliest convenience.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: 

Martin A. Bruehs
Registration No. 45,635

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

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